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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Before the
Federal Communications Commission

Washington, DC 20554

FCC - WASHINGTON

In the matter of

Implementation of Section 17
of the Cable Television
Consumer Protection and
Competition Act of 1992

Compatibility Between
Cable Systems and Consumer
Electronics Equipment

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) ET Docket No. 93-7
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Comments of the

Electronics Technicians Association, Int'l, Inc.

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Electronics Technicians Association, Int'l, Inc.

The Electronics Technicians Assn. (ETA) was organized as a not-for-profit professional association in 1978. Membership is composed of electronics technicians working in virtually all areas of the electronics industry. This includes private cable; franchised cable, telecommunications; radio communications, home satellite and antenna, consumer electronics sales and service and electronics formal education. By far the largest numbers of technician are involved in tv-radio-vcr (i.e. consumer electronics) sales and service. ETA works closely with the SDA-Satellite Dealers Assn., members of which are also affected by the compatibility of cable and consumer products. These technicians are the real-live people who homeowners rely on to properly connect, install, service and answer questions about operation and compatibility of the signal sources as they pertain to their audio and video products. These technicians and business owners are also frequently the target of complaints when the full features of their new hi-tech products cannot be utilized due to some incompatibility.

Because ETA members are representative of all electronics technicians, but especially the consumer electronics technician, we present the following comments:

Present-day cable subscribers on the majority of cable systems do not have a problem with compatibility. Subscribers on the much smaller number of large systems have compatibility problems in varying degrees.

The configuration of the majority of the cable systems in Indiana (which may represent typical systems across the U.S.) is shown to be systems where 90% have less than 30 Basic channels. Most use physical traps to differentiate between tiers, premium, or PPV channels. Those subscribers with non-cable-ready tvs and vcrs ordinarily use an inexpensive converter box to receive mid-band and superband channels. The converter box changes all the cable channels to a channel 3, or 4 signal. The subscriber's tv is left on ch 3 or 4 for all viewing. The CB may be manually operated, or a subscriber can select a remote CB. For the minority of viewers who have manual channel selection on their older tvs, the remote CB is a much more convenient way to watch tv, thus this is an improvement to them. Those who have remote control tvs which are not cable-ready find the CB, even if remote control, will negate some features of the newer tvs. For instance, volume level may not be adjustable. Since most RC CBs do allow the ON and OFF function, as well as channel selection, previous channel recall and favorite channel memory, then the primary functions of the tv or vcr aren't negated.

It would appear that some 50% of the households now are equipped with cable-ready tv sets. Thus the market for manually operated converter boxes is shrinking. This means that a portion of the problem with non-cable-ready tvs has been solved in a natural fashion.

Households on the common physical-trap type of cable systems can use their modern tvs, vcrs and audio systems since this method allows all the basic tier channels to be selected on each tv in the home that is connected to the cable system. Multiple channels can be viewed on PIP (picture-in-picture) tvs and vcrs, while a music service channel is supplying signal to an audio system. This type of cable system is likely to remain the standard for the vast majority of systems. It is being replaced in the fewer, but larger systems that represent a larger number of subscribers. The replacement, addressable systems are the present problem, not the more numerous trapped-systems.

The advantage of the addressable system is that it can provide improved security and reduced manpower costs since a central computer can select the programming a sub wants to view. So long as the security of the addressable systems is not compromised, this is a desirable feature. Once compromised, the physical-trap method must be reverted to. The undesirable side of addressable systems is that they, in some cases, negate some of the features of newer tv sets and vcrs. If the tv must remain on channel 3 or 4 while the converter system does all of the channel selection, then such features as picture-in-picture, or recording one while watching another channel, is negated. People require more than one choice of tv channel today. If

addressable converters can't provide that to subs, then that A.C. should not be allowed. On the other hand, only addressable converters can provide PPV service, realistically. PPV is desirable. An addressable converter box system that is able to allow all basic or tier channels simultaneously, which allows optionally selected single events, is desirable. It is also possible. Whether it is **economically** possible is not the area of our expertise. Currently, the addressable decoder-converter formats in use are not all standard, or compatible with each other. With increased investment in addressable systems by the large cable companies, the incompatibility problem becomes more severe. Without a single standard, tv-vcr makers have an inability to consider building converters into their products. They did build the cable-ready tuners into tv sets and vcrs, once they understood how cable distribution was to be handled by the cable industry. A standard addressable decoder would solve a major portion of the problems. If it became a standard built-in part of each tv or vcr, it would also enhance the ability of small cable system operators to be able to afford to implement such a process.

Telephone company experimentation with delivering multiple tv channels does not appear to solve any problems at all. At this point the decoder/converter mechanisms are not currently able to economically supply multiple channels into the home simultaneously. The promise of simple delivery of digital channels adds a new dimension to the compatibility problems and further confuses the public.

An interesting and related aspect of this hi-tech problem is the method used in the TVRO home satellite industry to deliver multiple channels, and to provide security for scrambled channel programmers such as ESPN and HBO, etc.: A single satellite receiver/positioner can select only 1 channel at a time presently. Also, sat receivers output only one channel at a time to the tv or vcr. To receive two channels at the same time, two receivers are required. If those 2 channels are scrambled, then each receiver must contain its own decoder too. Satellite viewers, increasingly, would like to be able to supply several channels to different rooms in the home. The cost of the VC2 descrambler is so high that having a second receiver is not cost effective and thus 90% of dish-owners who would like multiple channels simultaneously, simply do without. That isn't so much different than cable subscribers doing without the extra convenience of multiple-channel-reception on their new hi-tech audio/video products. The over 1 million tvro subscribers have grown accustomed to the problem, or limitation. Reluctantly living with it may be the most practical current answer to the cable decoder limitations. That is: living with it until a better delivery system evolves.

CONSUMER PRODUCTS MAKERS

Since the makers of TVs and VCRs have no clear direction as to which, if any, converter system will become standard, it is not conceivable that they can or will solve the problem until a

standard is determined. The cable industry has no single addressable system standard, thus it will be difficult for them to solve the problem currently, other than by reverting back to physical notch-filter type trapping. To force an addressable computerized system on small operators, those with less than 1,000 subs, would be disastrous for perhaps 80% of the cable systems. With high-definition tv not being compatible with any of the present addressable systems, the problem becomes a dilemma. No practical good answer other than to retain the status-quo, is seen. Since Congress has mandated that the Commission issue rules to ensure compatibility, it would seem there is no alternative but to revert to notch-filter trapping methods. That is the only present way to provide maximum usage of special features of modern tvs and vcrs.

JUST HOW FAR SHOULD THE COMPATIBILITY ISSUE BE TAKEN?

Section 3 of the N.O.I. is basically covered above except that the effort to **require a** feature that allows the taping of two consecutive cable programs that appear on different channels, seems a "Bit Much". The best answer, again, is reverting back to the use of the economical and practical notch-trap method of delivering cable signals. With that method, a subscriber has all channels available simultaneously and the vcr can easily be programmed to record one, then switch channels and record another at a different time, unattended.

Using the home dish system technology presently in use, many modern satellite receivers (top of the line models primarily) do have vcr timers built in. These will turn the receiver on at the vcr-programmed-time, record the selected program, turn off, then not only change to another desired channel automatically, but also **physically move the dish** to reorient aiming to any selected satellite which that second channel might be on. In fact, any number of selections may be made, depending on the capacity of programming of the vcr. To do a similar feat with cable, the addressable convertor/decoder would require its own programmable timer and channel selector, it would be expensive and probably out of reach of the small systems. Also it may not work with HDTV when and if it becomes a factor.

Section 5 of the N.O.I. : "Cable Ready" is the definition for a tv or vcr that has a CATV-NORMal switch, or programing option which allows Vlo, Vhi and UHF reception from 54mHz to 806 mHz, plus conversion of the UHF channel frequencies to Mid-Band 120 mHz to 174 mHz, Superband 216 to 300 mHz, Hyperband and Ultra Band. Total channels are 155. (57 cable). Some early products were not capable of receiving all 155 channels. The 155 Channel capacity may now be the de-facto standard "cable-ready" definition. "Cable compatible" isn't as commonly used or understood a term.

Offering the option of having all channels supplied by the cable system available simultaneously will invalidate some addressable cable systems. This again leaves the option of notch-trapping as a system that does allow all channels to be utilized simultaneously.

Converters for the older, notch-filter type systems are readily available from retail vendors. Some cable companies sell them to those who would rather own their own than lease. Surely the enormity of the signal theft problem has been a logical reason for the cable industry to have a reluctance to publicise their availability. Since each cable company is responsible for monitoring their joint aircraft/cable channel frequencies for leakage, it would seem that some concern may be needed to allow the cable company to seek out converter boxes or associated customer-installed cable wiring which shows up as intolerable CLI leakage. Otherwise the cable company system would have the total responsibility for assuming compliance as per their CLI requirements, yet be prevented from access to the source of the leak (s).

Dual-cable delivery is a rarity.

We assume that figures on the types of converters in use, addressable systems and alternate methods of providing security (such as positive traps) are available and will be supplied by the national cable tv associations.

Today the notch-filter method of providing security, along with visual inspection of illegal hookups is economical in that notch filters cost less than ten dollars each. Simple remote control set-top converter boxes can be purchased in quantity for less than \$60. Positive traps, which utilize an intentionally inserted scrambling signal in a channel (or several channels) to prevent unauthorized signal use, are economical. The scramble-signal-inserter for the head-end of the cable system is also economical. Small systems can manage this type of security.

The entire problem of compatibility may be somewhat blown out of proportion. We estimate no more than 5% of today's subscribers experience the problem.

Consumer TV equipment anticipated in the near future as a topic, should be addressed by the tv importers association or individual manufacturers.

Digital transmission technology appears to be near. Nothing to date suggests the costs will be favorable.

Technical standards for assuring that cable systems provide technically compatible service need some evolving. The time mandate may be impossible to comply with.

Modern tvs are built with an eye towards eliminating direct pick-up of off-air signals. Older tvs had an unshielded connecting twin-lead cable from the back-of-set to the input of the tv tuner module. This was a serious ingress point for extraneous signals to be imported. The worst case was where subscribers lived close to the broadcast stations. Today's tvs use shielded transmission cable to transfer the signals from the back-of-set jack. This should be mandated for the future.

Many brands of tvs do have dual inputs and remote-controlled antenna input port selection. It is convenient for a minority of set owners. It should not be a requirement.

Buy-through prohibition will increase costs for most cable companies and thus, their subscribers, since allowing a sub to purchase "only HBO" or "only PPV" would require a complete system of traps for basic and any tiers or other programming choices. Imagine a BASIC trap, a TIER 1 trap, a TIER 2 trap, an HBO trap, a CINEMAX trap, etc., etc., while allowing a single subscriber to buy only "The Movie Channel" ! There is a word for that, and it is Insanity! On the other hand, an addressable system which is capable of sorting out a single service would be giving its subs more choice by doing that, and such a single service request could be practical, with the single channel costs being raised considerably to reflect all costs of deliver, service and handling.

N.O.I. paragraph #15 regarding remote control requirements would appear to be reasonable as directed by the ACT.

Our association is not able to intelligently describe the extent to which subscriber remote control capability may be disabled externally by the operator. This because it is the large and addressable systems that may have that capability.

Most remote control cable convertors can be operated manually, also. A typical monthly manual converter box rental fee is \$2 or \$3. Remote monthly lease fee may be \$4 or \$5. The costs of addressable converters is much higher, of course.

The most practical approach to future cable/tv development may be that of "wait and see". The proliferation of tv channels, with many valuable choices, has improved the communications of the public. Cable's use of satellite delivery, and the subsequent usage of satellite for non-cable and broadcast programming, coupled with a competitive and often advertiser-supported satellite direct broadcast market is evolving to the advantage of the public. Removal of restrictive ordinances and covenants against direct broadcast from satellites would go a long way towards making this technology competitive with cable, allowing the public more choice. It may be that some additional time is needed to "sort out" the improvements and to find economical and prudent ways to deal with each individual factor. Surely, to mandate a standard interface and standard addressable converter system that can't work with digital, compressed, or high definition technology, will be an exercise in futility that can only raise costs, reduce incentives and stymie growth.

The announcements by TCI, DirecTV and the phone industry that they are on the verge of supplying "hundreds of channels" is exciting, however, the net result of such announcements so far has been to confuse the public and prepare it for technology that may easily be as much as 10 years away from public perception and acceptance. People have never made an overnight change. It took many years to make the electric vacuum sweeper a household item. Refrigerators and air conditioners and indoor plumbing all took years to become universally accepted and used. C-band satellite is far superior to any cable system. Because it is superior

has not caused everyone to shift overnight. Only three million families have made the initial investment. Whether other types of DBS or fiber optics or some other technology becomes dominant is yet to be seen. To not implement the CCPS of 1992 because of "announcements" by industry is to negate the purposes of the ACT. On the other hand, to present impossible-to-work-with and expensive regulations that accomplish little is also not sound government.

We support section 18 of the N.O.I. in principle.

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